



<b>Substitute for form 1449A/PTO (Modified)</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		<b>Compleat if Kn wn</b>			
		Application Number	09/927,160		
		Filing Date	August 9, 2001		
		First Named Inventor	PATI, Sushma		
		Group Art Unit	1632		
		Examiner Name	Anne-Marie Falk		
Sheet	1	of	1	Attorney Docket Number	A-64580-4/RFT/NBC (467135-116)

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.	U.S. Patent Document Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
Amr	A1	6,255,113 B1	07-03-2001	Zarling et al.	
	A2				
	A3				
	A4				
	A5				
	A6				
	A7				
	A8				
	A9				
	A10				
	A11				

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.	Foreign Patent Document Country Code <sup>2</sup> Number <sup>2</sup> Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>4</sup>
	B1					
	B2					
	B3					
	B4					
	B5					
	B6					

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>4</sup>
	C1		
	C2		
	C3		
	C4		
	C5		

Examiner Signature	Anne-Marie Falk	Date Considered	5/20/04
--------------------	-----------------	-----------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

<sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231. 1097162\_1.DOC

RECEIVED  
FEB 06 2003  
TECH CENTER 1600/1900

Please type a plus sign (+) inside this box → ☐

PTO/SB/8A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

<p>Substitute for Form 1449A/PTO</p> <p><b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b></p> <p>(use as many sheets as necessary)</p>		<b>Complete if Known</b>	
		Application Number	09/927,160
		Filing Date	August 9, 2001
		First Named Inventor	PATI, Sushma
		Group Art Unit	1632
Examiner Name	Anne-Marie Falk		
Attorney Docket Number	A-64580-4/RFT/AMS/NBC		
Sheet	1	of	8

TECH CENTER 600/2900

APR 1 2002

RECEIVED

**U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
Ama	A1	4,873,191		Wagner et al.	10/1989	
	A2	4,888,274		Radding et al.	12/1989	
	A3	4,950,599		Bertling	08/1990	
	A4	5,223,414		Zarling et al.	06/1993	
	A5	5,264,618		Felgner et al.	11/1993	
	A6	5,272,071		Chappel	12/1993	
	A7	5,273,881		Sena et al.	12/1993	
	A8	5,366,894		Clark et al.	11/1994	
	A9	5,416,260		Koller et al.	05/1995	
	A10	5,451,513		Maliga et al.	09/1995	
	A11	5,459,072		McKay et al.	10/1995	
	A12	5,460,941		Camerini-Otero et al.	10/1995	
	A13	5,464,764		Capecchi et al.	11/1995	
	A14	5,468,629		Calhoun	11/1995	
	A15	5,487,992		Capecchi et al.	01/1996	
	A16	5,501,967		Offringa et al.	03/1996	
	A17	5,506,098		Zarling et al.	04/1996	
Ama	A18	5,510,473		Camerini-Otero et al.	04/1996	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>2</sup> (if known)				
Ama	B1	EP	0718404		TAKARA SHUZO CO. (JP)	11/1995		
	B2	WO	91/19796		BAYLOR COLLEGE MED (US)	12/1991		
	B3	WO	92/08791		US COMMERCE (US)	05/1992		
	B4	WO	92/15694		SALK INST BIOLOG STUD (US)	09/1992		
	B5	WO	93/03736		MICROPROBE CORP (US)	03/1993		
	B6	WO	93/05177		DAIKIN IND LTD (JP)	03/1993		
	B7	WO	93/05178		DAIKIN IND LTD (JP)	03/1993		
Ama	B8	WO	93/22443		STANFORD RES INST INT (US)	11/1993		

Examiner Signature	Anne-Marie Falk	Date Considered	5/20/04
--------------------	-----------------	-----------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box → ☐

PTO/SB/8A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO		MAR 28 2002		Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>		Application Number		09/927,160	
		Filing Date		August 9, 2001	
		First Named Inventor		PATI, Sushma	
		Group Art Unit		1632	
		Examiner Name			
Sheet	2	of	8	Attorney Docket Number A-64580-4/RFT/AMS/NBC	

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
Am2	A19	5,527,674		Guerra et al.	06/1996	
	A20	5,543,131		Levy	08/1996	
	A21	5,545,806		Lonberg et al.	08/1996	
	A22	5,565,350		Kmiec	10/1996	
	A23	5,571,688		Mekalanos et al.	11/1996	
	A24	5,578,461		Sherwin et al.	11/1996	
	A25	5,580,734		Treco et al.	12/1996	
	A26	5,589,369		Seidman et al.	12/1996	
	A27	5,612,205		Kay et al.	03/1997	
	A28	5,614,396		Bradley et al.	03/1997	
	A29	5,763,240		Zarling et al.	06/1998	
Am2	A30	5,948,653		Pati et al.	09/1999	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Office <sup>2</sup>	Number <sup>3</sup>			
Am2	B9	WO	94/04032	UNIV CALIF (US)	03/1994	
	B10	WO	94/04669	MEDICAL RES COUNSEL (GB)	03/1994	
	B11	WO	95/22625	AFFYMAX TECH NV (AN)	08/1995	
	B12	WO	96/03051	GENE PHARMING EUROP (NL)	02/1996	
	B13	WO	96/40765	U.S. DEPT HEALTH (US)	12/1996	
	B14	WO	97/04111	U.S. DEPT HEALTH (US)	02/1997	
Am2	B15	WO	97/05268	SETRATECH (FR)	02/1997	

Examiner Signature	Amme-Marie Zalk	Date Considered	5/20/04
--------------------	-----------------	-----------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box



PTO/SB/8B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>		<b>Complete if Known</b>			
		Application Number	09/927,160		
		Filing Date	August 9, 2001		
		First Named Inventor	PATI, Sushma		
		Group Art Unit	1632		
		Examiner Name			
Sheet	3	of	8	Attorney Docket Number	A-64580-4/RFT/AMS/NBC

RECEIVED

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
Ama	C1	AFONINA, I., et al., "Sequence-specific arrest of primer extension on single-stranded DNA by an oligonucleotide-minor groove binder conjugate", Proc. Natl. Acad. Sci. USA, 93:3199-3204 (Apr. 1996).
	C2	ANDERSON, W.F., "Human gene therapy." Nature. 1998 Apr 30;392(6679 Suppl):25-30.
	C3	AUSUBEL et al., "Short Protocols in Molecular Biology," 2n ed. (John Wiley & Sons: New York), pp. 9-14 and 9-15 (1992).
	C4	BERTLING, "Transfection of a DNA/Protein Complex into Nuclei of Mammalian Cells Using Polyoma Capsids and Electroporation," Bioscience Reports, 7:107-111 (1987).
	C5	BERTOLOTI, R., "Recombinase-mediated Gene Therapy", Bionews, Newsletter of BioTechnology, Health and Environmental Sciences, N14 (Nov. 1996).
	C6	BRADLEY, A. et al., "Modifying the mouse: design and desire." Biotechnology (N Y). 1992 May;10(5):534-9
	C7	CAMERINI-OTERO, R.D., et al., "Homologous Recombination Proteins in Prokaryotes and Eukaryotes", Annu. Rev. Genetics, 29:509-52 (1995).
	C8	CASSUTO, et al., "Initiation of genetic recombination" Homologous pairing between duplex DNA molecules promoted by recA protein," Proc. Natl. Acad. Sci. USA, 77(7):3962-3966 (1980).
	C9	CHENG et al., "RecA-Directed Hybridization of Psoralen-Monoadducted DNA Oligonucleotides to Duplex Targets," NATO ASI Ser., Ser. C., Photochemical Probes in Biochemistry, 272:169-177, P.E. Nielsen (ed.), (1989).
	C10	CLARKE et al., "Defective Epithelial Chloride Transport in a Gene-Targeted Mouse Model of Cystic Fibrosis," Science, 257:1125-1128 (1992).
	C11	CLERMONT, Y. et al., "Structure of the Golgi Apparatus in Stimulated and Nonstimulated Acinar Cells of Mammary Glands of the Rat," The Anatomical Record 237:308-317 (1993).
	C12	CLERMONT, et al., "Transport of Casein Submicelles and Formation of Secretion Granules in the Golgi Apparatus of Epithelial Cells of the Lactating Mammary Gland of the Rat," The Anatomical Record 235:363-373 (1993).
	C13	COLE-STRAUSS, A., et al., "Correction of the Mutation Responsible for Sickle Cell Anemia by an RNA-DNA Oligonucleotide", Science, Vol.273:1386-1389 (Sep. 1996).
	C14	COX et al., "Enzymes of General Recombination," Ann. Rev. Biochem, 56:229-262 (1987).
	C15	CRAMERI, A., et al., "Improved Green Fluorescent Protein by Molecular Evolution Using DNA Shuffling", Nature BioTech., 14:315-319 (Mar. 1996).
	C16	CRAMERI, A., et al., "Construction and evolution of antibody-phage libraries by DNA shuffling", Nature Medicine, Vol.2, No.1:100-102 (Jan. 1996).
↓	C17	DECHIARA, T.M. et al., "A growth-deficiency phenotype in heterozygous mice carrying an insulin-like growth factor II gene disrupted by targeting." Nature. 1990 May 3;345(6270):78-80
Ama	C18	DRUMM, et al., "Correction of the Cystic Fibrosis Defect In Vitro by Retrovirus-Mediated Gene Transfer," Cell, 62:1227-1233 (1990).

Examiner Signature	<i>Anne Marie Zalk</i>	Date Considered	5/20/04
--------------------	------------------------	-----------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English Language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box → ☐

PTO/SB/8B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)		<b>Complete if Known</b>	
		Application Number	09/927,160
		Filing Date	August 9, 2001
		First Named Inventor	PATI, Sushma
		Group Art Unit	1632
		Examiner Name	
		Attorney Docket Number	A-64580-4/RFT/AMS/NBC
Sheet	4	of	8

RECEIVED

APR 1 2002

TECH CENTER 1600/2900

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
Am	C19	DUNDERDALE, et al., "Formation and Resolution of Recombination Intermediates by E. Coli RecA and RuvC Proteins," <i>Nature</i> , 354(19):506-510 (1991).	
	C20	FABRE, J.W. "Nudging xenotransplantation towards humans." <i>Nat Med.</i> 1995 May;1(5):403-4.	
	C21	FELGNER et al. "Lipofection: A Highly Efficient, Lipid-Mediated DNA-Transfection Procedure," <i>Proc. Natl. Acad. Sci. USA</i> , 84:7413-7417 (1987).	
	C22	FIELDS and JANG, "Presence of a Potent Transcription Activating Sequence in the p53 Protein," <i>Science</i> , 249:1046-1049 (1990).	
	C23	FU, D., et al., "Sequencing double-stranded DNA by strand displacement", <i>Nucleic Acids Res.</i> , 25(3):677-679 (1997).	
	C24	GATES, C.M., et al., "Affinity Selective Isolation of Ligands from Peptide Libraries Through Display on a lac Repressor "Headpiece Dimer", <i>J. Mol. Biol.</i> , 255:373-386 (1996).	
	C25	GURDON, "The Birth of Cloning," <i>The Sciences</i> 26-31 (September-October 1997).	
	C26	HAMMER, R.E. et al., "Spontaneous inflammatory disease in transgenic rats expressing HLA-B27 and human beta 2m: an animal model of HLA-B27-associated human disorders." <i>Cell</i> . 1990 Nov 30;63(5):1099-112	
	C27	HART, et al., "Born Again?," <i>The Sciences</i> 47-51 (September-October 1997).	
	C28	HASTY et al., "Introduction of a Subtle Mutation into the Hox-2.6 Locus in Embryonic Stem Cells," <i>Nature</i> , 350:243-246 (1991).	
	C29	HERZING, L.B.K., et al., "Novel lacZ-based recombination vectors for mammalian cells", <i>Gene</i> , 137:163-169 (1993).	
	C30	HUNGER-BERTLING, K., et al., "Short DNA fragments induce site specific recombination in mammalian cells", <i>Mol. and Cellular Biochem.</i> , 92:107-116 (1990).	
	C31	HUYNH, et al., "Establishment of Bovine Mammary Epithelial Cells (MAC-T): An in Vitro Model for Bovine Lactation," <i>Experimental Cell Research</i> 197:191-199 (1991).	
	C32	JASIN, M., et al., "Targeted transgenesis", <i>Proc. Natl. Acad. Sci. USA</i> , 93:8804-8808 (Aug. 1996).	
	C33	JAYASENA, V.K., et al., "Complement-stabilized D-loop--RecA-catalyzed Stable Pairing of Linear DNA Molecules at Internal Sites", <i>J. Mol. Biol.</i> , 230:1015-1024 (1993).	
	C34	KARATZAS, et al., "Toward Altering Milk Composition by Genetic Manipulation: Current Status and Challenges," <i>J. Dairy Sci.</i> 80:2225-2232 (1997).	
	C35	KEEFER, et al., "Bovine Inner Cell Mass Cells as Donor Nuclei in the Production of Nuclear Transfer Embryos and Calves," <i>Biology of Reproduction</i> , 50:935-939 (1994).	
Am	C36	KEEFER, et al., "Isolation and Maintenance of Putative Embryonic Stem (ES) Cells Derived from Nigerian Dwarf Goat Embryos," <i>Biol. Reprod.</i> 54(51):172 [No. 462] (1996).	

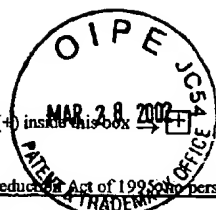
Examiner Signature	Amme-Marie Jalk	Date Considered	5/20/04
--------------------	-----------------	-----------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English Language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box



PTO/SB/8B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		<b>Complete if Known</b>	
		Application Number	09/927,160
		Filing Date	August 9, 2001
		First Named Inventor	PATL, Sushma
		Group Art Unit	1632
Examiner Name			
Sheet	5	of	8
		Attorney Docket Number	A-64580-4/RFT/AMS/NBC

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
Ama	C37	KIDO, M., et al., "Escherichia coli RecA Protein Modified with a Nuclear Location Signal Binds to Chromosomes in Living Mammalian Cells", <i>Exper. Cell Res.</i> , 198:107-114 (1992).	
	C38	KONFORTI, et al., "DNA substrate requirements for stable joint molecule formation by the recA and single-stranded DNA-binding proteins of Escherichia coli," <i>The Journal of Biological Chemistry</i> , 226(16):10112-10121 (1991).	
	C39	KOWALCZYKOWSKI, S.C., et al., "Homologous Recombination Proteins and their Potential Applications in Gene Targeting Technology," <i>Gene Targeting</i> , CRC Press: Boca Raton, ed. Manuel A. Vega, Chap. 7:167-210 (1995).	
	C40	KUEHN, M.R. et al., "A potential animal model for Lesch-Nyhan syndrome through introduction of HPRT mutations into mice." <i>Nature</i> . 1987 Mar 19-25;326(6110):295-8	
	C41	KUHN, R., et al. "Inducible gene targeting in mice." <i>Science</i> . 1995 Sep 8;269(5229):1427-9	
	C42	KUNZELMANN, K., et al., "Gene targeting of CFTR DNA in CF epithelial cells", <i>Gene Therapy</i> , 3:859-867 (1996).	
	C43	KUTYAVIN, I.V., et al., "Oligonucleotides Containing 2-Aminoadenine and 2-Thiothymine Act as Selectively Binding Complementary Agents", <i>Biochemistry</i> , 35:11170-11176 (1996).	
	C44	LANGER et al., "Enzymatic Synthesis of Biotin-Labeled Polynucleotides: Novel Nucleic Acid Affinity Probes," <i>Proc. Natl. Acad. Sci. USA</i> , 78(11):6633-6637 (1981).	
	C45	LIN, Y. et al., "Morphologic Observation of Neutrophil Diapedesis Across Bovine Mammary Gland Epithelium in Vitro," <i>Am. J. Vet. Res.</i> 56(2):203-207 (1995).	
	C46	LIN, et al., "Quantification of Bovine Neutrophil Migration Across Mammary Epithelium in vitro," <i>Can. J. Vet. Res.</i> 60:145-149 (1996).	
	C47	LUDWIG, D.L., et al., "Spontaneous and Induced Homologous Recombination Between lacZ Chromosomal Direct Repeats in CV-1 Cells", <i>Somane Cell and Molecular Genetics</i> , 20(1):11-25 (1994).	
	C48	LUKHTANOV, E.A. et al., "Rapid and Efficient Hybridization-Triggered Crosslinking within a DNA Duplex by an Oligodeoxyribonucleotide Bearing a Conjugated Cyclopropapyrroloindole," <i>Nucleic Acids Research</i> , 24(4):683-687 (1996).	
	C49	MACDONALD, et al., "Neutrophil Function In Vitro: Diapedesis and Phagocytosis," <i>J Dairy Sci.</i> , 77:628-638 (1994).	
	C50	MATSUMURA, I., et al., "DNA Shuffling brightens prospects for GFP", <i>Nature BioTech.</i> , Vol. 14:366 (Mar. 1996).	
	C51	MEADE, H. "Dairy Gene," <i>The Sciences</i> , 20-25 (September/October 1997).	
	C52	MEYER Jr., R.B., et al., "Efficient, Specific Cross-Linking and Cleavage of DNA by Stable, Synthetic Complementary Oligodeoxynucleotides", <i>J. of the Amer. Chem. Soc.</i> , 111(22):8517-8519 (1989).	
	C53	MULLER, et al., "RecA-mediated annealing of single-stranded DNA and its relation to the mechanism of homologous recombination," <i>J. Mol. Biol.</i> , 221:131-145 (1991).	
Ama	C54	MULLINS, J.J., et al., "Expression of the DBA/2J Ren-2 gene in the adrenal gland of transgenic mice." <i>EMBO J.</i> 1989 Dec 20;8(13):4065-72	

Examiner Signature	<i>Amme Marie Zalk</i>	Date Considered	5/20/04
--------------------	------------------------	-----------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English Language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

RECEIVED



Please type a plus sign (+) inside this box →

PTO/SB/8B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Project 10-95, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

<b>Substitute for form 1449B/PTO</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		<b>Complete if Known</b>			
		Application Number	09/927,160		
		Filing Date	August 9, 2001		
		First Named Inventor	PATI, Sushma		
		Group Art Unit	1632		
		Examiner Name			
Sheet	6	of	8	Attorney Docket Number	A-64580-4/RFT/AMS/NBC

<b>OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS</b>			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
Amz	C55	MULLINS, J.J. et al., "Fulminant hypertension in transgenic rats harbouring the mouse Ren-2 gene." Nature. 1990 Apr 5;344(6266):541-4	
	C56	O'GORMAN, et al., "Recombinase-mediated gene activation and site-specific integration in mammalian cells," Science, 251:1351-1355 (1991).	
	C57	ORKIN et al., "Report and Recommendations of the Panel to Assess the NIH Investment in Research on Gene Therapy," National Institutes of Health, 7 December 1995.	
	C58	PATI, W., et al., "Sequence-Specific DNA Targeting", Encyclo. of Cancer, Vol. III:1601-1625 (1997).	
	C59	PENNISI, "The Lamb That Roared," Science 278:2038-2039 (1997).	
	C60	PENNISI, "After Dolly, a Pharming Frenzy," Science 279:646-648 (1998).	
	C61	PLATENBURG, et al., "Mammary-gland-specific hypomethylation of Hpa II Sites Flanking the Bovine $\alpha$ -S1-Casain gene," Transgenic Research, 5:421-431 (1996).	
	C62	PODYMINOGIN, M.A., et al., "RecA-Catalyzed, Sequence-Specific Alkylation of DNA by Cross-Linking Oligonucleotides. Effects of Length and Nonhomologous Base Substitutions", Biochemistry, 35:7267-7274 (1996).	
	C63	PODYMINOGIN, M.A., et al., "Sequence-Specific Covalent Modification of DNA by Cross-Linking Oligonucleotides. Catalysis by RecA and Implication for the Mechanism of Synaptic Joint Formation", Biochemistry, 34:13098-13108 (1995).	
	C64	PRELLE, et al., "Beneficial Effects of Thiol Compounds on Hatching Rate and ICM Outgrowth of Bovine IVM/IVF Embryos," Biol. Reprod. 54(51):172 [No. 463] (1996).	
	C65	RASHID, N., et al., "Characterization of a RecA/RAD51 homologue from the hyperthermophilic archaeon Pyrococcus sp. KOD1", Nucleic Acids Research, Vol. 25, No.4:719-726 (1997).	
	C66	RAWLS, R., "Hybrid DNA-RNA efficiently repairs gene", C&EN, p.11 (Sep. 1996).	
	C67	REISS, B., et al., "RecA protein stimulates homologous recombination in plants", Proc. Natl. Acad. Sci. USA, 93:3094-3098 (Apr. 1996).	
	C68	REJET, B.M.J., et al., "Homologous DNA Targeting with RecA Protein-coated Short DNA Probes and Electron Microscope Mapping on Linear Duplex Molecules", rep. fr. J. Mol. Biol., 232:779-791 (1993).	
	C69	ROMAGNOLO, et al., "Regulation of expression of IGF-I-induced IGFBP-3 and IGF-1-receptor by constitutive vs regulated expression of recombinant IGF-I in transfected mammary epithelial cells," Endocrine Journal 2:375-384 (1994).	
	C70	SABURI, et al., "Production and Analysis of Germ Line Chimeras Derived from a Single ES Cell Microinjected into 8-Cell Stage Embryo of the Mouse," Biol. Reprod. 54(51):172 [464] (1996).	
Amz	C71	SAUER and HENDERSON, "Targeted Insertion of Exogenous DNA into the Eukaryotic Genome by the Cre Recombinase," New Biologist, 2:441-449 (1990).	

Examiner Signature	Amz-Maria Jalk	Date Considered	5/20/04
--------------------	----------------	-----------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English Language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Please type a plus sign (+) inside this box ☐

PTO/SB/8B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

<b>Substitute for form 1449B/PTO</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		<b>Complete if Known</b>	
		Application Number	09/927,160
		Filing Date	August 9, 2001
		First Named Inventor	PATI, Sushma
		Group Art Unit	1632
Examiner Name			
Attorney Docket Number	A-64580-4/RFT/AMS/NBC		
Sheet	7	of	8

RECEIVED  
APR 1 2002  
TECH CENTER 1600 2800

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
Amz	C72	SCHNIEKE, et al., "Human Factor IX Transgenic Sheep Produced by Transfer of Nuclei from Transfected Fetal Fibroblasts," Science 278:2130-2133 (1997).
	C73	SENA, E.P., et al., "Targeting in linear DNA duplexes with two complementary probe strands for hybrid stability", Nature Genetics, 3:365-372 (Apr. 1993).
	C74	SHANER et al., "The distribution of Escherichia coli recA protein bound to duplex DNA with single-stranded ends," Journal of Biological Chemistry, 262(19):9220-9230 (1987).
	C75	SHIBATA, et al., "Homologous pairing in genetic recombination: Complexes of recA protein and DNA," Proc. Natl. Acad. Sci. USA, 76(10):5100-5104 (1979).
	C76	SHINKEL, T.A. et al., "Changes in cell surface glycosylation in alpha1,3-galactosyltransferase knockout and alpha1,2-fucosyltransferase transgenic mice." Transplantation. 1997 Jul 27;64(2):197-204
	C77	SMITHIES et al., "Insertion of DNA Sequences into the Human Chromosomal -Globin Locus by Homologous Recombination," Nature, 317:230-234 (1985).
	C78	SOLTIS, et al., "RecA protein promoted DNA strand exchange," The Journal of Biological Chemistry, 258(10):6073-6077 (1983).
	C79	STEMMER, W.P.C., et al., "Single-step assembly of a gene and entire plasmid from large numbers of oligodeoxynucleotides", Gene, 164:49-53 (1995).
	C80	STEMMER, W.P.C., "DNA shuffling by random fragmentation and reassembly: In vitro recombination for molecular evolution", Proc. Natl. Acad. Sci. USA, Vol. 91:10747-10751 (Oct. 1994).
	C81	STEMMER, W.P.C., "Rapid evolution of a protein in vitro by DNA shuffling", Nature, 370:389-391 (Aug. 1994).
	C82	STICE, et al., "Pluripotent Bovine Embryonic Cell Lines Direct Embryonic Development Following nuclear Transfer," Biology of Reproduction, 54:100-110 (1996).
	C83	STICE, et al., "Multiple Generational Bovine Embryo Cloning," Biol. Reprod. 48:715-719 (1993).
	C84	TABONE, J.C. et al., "Factors Influencing the Extent and Regiospecificity of Cross-Link Formation between Single-Stranded DNA and Reactive Complementary Oligodeoxynucleotides," Biochemistry, 33(1):375-383 (1994).
	C85	TAUROG, J.D., et al., "HLA-B27 in inbred and non-inbred transgenic mice. Cell surface expression and recognition as an alloantigen in the absence of human beta 2-microglobulin." J Immunol. 1988 Dec 1;141(11):4020-3
	C86	THOMAS et al., "High Frequency Targeting of Genes to Specific Sites in the Mammalian Genome," Cell, 44:419-428 (1986).
	C87	TOMAN, et al., "Production of Recombinant Human Type I Procollagen in the Mammary Gland of Transgenic Mice," Collagen Corporation 1-19 (5 FIG. Sheets).
	C88	TOUCHETTE, Nat. Med. 2(1):7-8 (Jan. 1996)
Amz	C89	TURNER, et al., "Role of Tissue Remodeling in Mammary Epithelial Cell Proliferation and Morphogenesis," J. Dairy Sci. 74:2801-2807 (1991).

Examiner Signature	Amélie Jalk	Date Considered	5/20/04
--------------------	-------------	-----------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English Language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Please type a plus sign (+) inside this box →

PTO/SB/8B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PT

# **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

(use as many sheets as necessary)

## **Complete if Known**

Application Number	09/927,160
Filing Date	August 9, 2001
First Named Inventor	PATI, Sushma
Group Art Unit	1632
Examiner Name	
Attorney Docket Number	A-64580-4/RFT/AMS/NBC

TECH CENTER 1600/2900  
APR 1 2002

RECEIVED

## **OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	1*
Am2	C90	VALANCIUS and SMITHIES, "Testing and "In-Out" Targeting Procedure for Making Subtle Genomic Modifications in Mouse Embryonic Stem Cells," Molecular and Cellular Biology, 11(3):1402-1408 (1991).	
	C91	VERMA, I.M. and Somia, N. "Gene therapy - promises, problems and prospects." Nature. 1997 Sep 18;389(6648):239-42.	
	C92	VOLOSHIN, O.N., et al., "Homologous DNA pairing promoted by a 20 amino acid peptide derived from RecA", Science, 272:868-872 (1996).	
	C93	WALL, R.J., "Transgenic livestock: Progress and prospects for the future." Theriogenology 45:57-68 (1996)	
	C94	WOO, J., et al., "G/C-modified oligodeoxynucleotides with selective complementarity: synthesis and hybridization properties", Nucleic Acids Res., 24(13):2470-2475 (1996).	
	C95	WOODWARD, et al., "Inhibition of Cellular Proliferation and Modulation of Insulin-Like Growth Factor Binding Proteins by Retinoids in a Bovine Mammary Epithelial Cell Line," Journal of Cellular Physiology, 167:488-499 (1996).	
	C96	WU et al., "Targeting Genes: Delivery and Persistent Expression of a Foreign Gene Driven by Mammalian Regulatory Elements in Vivo," The Journal of Biological Chemistry, 264(29):16985-16987 (1989).	
	C97	YOON, K., et al., "Targeted gene correction of episomal DNA in mammalian cells mediated by a chimeric RNA-DNA oligonucleotide", Proc. Natl. Acad. Sci. USA, 93:2071-2076 (Mar. 1996).	
Am2	C98	ZILINSKAS, "Bioethics and Biological Weapons," Science 279:635 (1998).	
	C99	"Production of Recombinant Proteins in the Milk of Transgenic Animals," Genzyme Transgenics 3-30.	

Examiner Signature	Am2 - Marie Zalk	Date Considered	5/20/04
--------------------	------------------	-----------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English Language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231. 8086 1449B FRM (1/01)